

Reply to Office Action dated November 26, 2008

**REMARKS**

Claims 1-12, 15-19, 23 and 25-27 are pending in this application. By this Amendment, claims 1, 2, 9-12, 15, 19 and 26-27 are amended. Various amendments are made for clarity and are unrelated to issues of patentability.

The Office Action rejects claims 1-12, 15-19, 23 and 25-27 under 35 U.S.C. §112, second paragraph. It is respectfully submitted that the above amendment obviate the grounds for rejection.

The present specification describes that one data communication protocol capable of processing both IP frames and PPP frames is mounted on a video chip, and the mounted data communication protocol processes frames received through a first communication network or a second communication network so as to transmit the same to an application, or the data communication protocol processes data received from the application so as to transmit the same to a first modem chip or a second modem chip. Independent claim 1 is amended to recite a data communication protocol. The other claims have been similar amended. The claims are definite to one skilled in the art. Withdrawal of the rejection is respectfully requested.

The Office Action rejects claims 1-2, 6-12 and 15-18 under 35 U.S.C. §103(a) over U.S. Patent Publication 2003/0103518 to Han in view of newly-cited U.S. Patent 5,666,362 to Chen et al. (hereafter Chen) and the alleged Admitted Prior Art (hereafter AAPA). The Office Action also rejects claims 19, 23 and 25-27 under 35 U.S.C. §103(a) over Han in view of Chen, AAPA and EP 1 213 941 to Park et al. (hereafter Park). The rejections are respectfully traversed with respect to the pending claims.

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Independent claim 1 recites a video chip having an application of packet data services and a data communication protocol processing packets received through a first communication network and a second communication network and transmitting the packets into the application. Independent claim 1 also recites a Universal Asynchronous Receiver Transmitter (UART) interface and having a protocol stack relating to the first communication network, and a second network modem chip coupled with the video chip through an interface and having a protocol stack relating to the second communication network. Independent claim 1 further recites that the data communication protocol of the video chip converts the Point to Point Protocol (PPP) packets received from a first network modem chip into Internet Protocol (IP) packets for the video chip, and the data communication protocol of the video chip converts IP packets in the video chip into PPP packets for the first network modem chip, wherein the data communication protocol internally processes IP packets from the application and provides the packets to the second network modem chip, and the data communication protocol receives the IP packets from the second network modem chip directly.

The applied references do not teach or suggest at least these features of independent claim 1. More specifically, the Office Action (on page 3) states that Han does not disclose a second modem chip, a second data communication protocol and a second network modem chip. The Office Action (on page 3) then cites AAPA as disclosing a Dual Band Dual Mode (DBDM) terminal that includes CDMA (first modem) and WCDMA (second modem chip). The Office Action (on page 4) also cites Chen's FIG. 3 as disclosing a UART 105 to transmit PPP packets between network devices. The Office Action does not provide any reference that suggests

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converting PPP packets (in the video chip) into IP packets and/or converting IP packets (in the video chip) into PPP packets. The Office Action then asserts that it would have been obvious to use a protocol converter in Han's video chip because Chen's UART interface only supports PPP protocol and AAPA video chip provides IP video services. Applicant respectfully disagrees. Applicant also respectfully submits that the combination set forth in the Office Action is based on impermissible hindsight as there is no suggestion in the prior art for the alleged combination.

Paragraphs [0030]-[0038] of the published application (namely U.S. Publication No. 2004/0213262) and FIG. 1 relate to one data communication protocol capable of processing the IP and PPP frames being mounted on a video chip of a DBDM terminal, thus enabling the CDMA and WCDMA systems to maintain a consistency of the communication protocol.

As described in the present specification, the DBDM terminal includes a CDMA modem chip having a communication protocol for processing related art IP frames, a WCDMA modem chip for supporting both the IP and PPP frames, and an application for processing packet data services. The CDMA modem chip and the WCDMA modem chip may perform only a modem function for a connected communication network, and one data communication protocol for processing the IP and PPP frames is mounted on the video chip. Thus, two different communication systems may maintain the communication protocol with consistency.

The Office Action generally asserts that Han's FIG. 1 protocol layer corresponds to the video chip of the present specification, and that the claimed features may be easily derived by a combination of AAPA and Han.

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Han's API 111 may correspond to the packet application 11 of the video chip discussed in the present specification and Han's RLP 103 and physical layer 101 may correspond to the CDMA protocol stack 22 discussed in the present specification.

However, Han's TCP/UDP 109, IP 107 and PPP 105 do not relate to the data communication protocols (TCP/UDP, IP, PPP) discussed in the present specification. That is, the data communication protocols of the present specification may support both IP frames and PPP frames. Han's protocol supports only PPP frames, and does not support IP frames.

Han does not disclose a socket API, UART, DPRAM interface that is included in a video chip (such as discussed in the present specification), and a second modem chip. At best, Han discloses a combination of a CDMA modem chip and a video chip.

The Office Action states that the claimed features may be derived by the combination of Han and AAPA. However, the prior art does not suggest any motivation for combining Han and AAPA.

Further, even if Han and AAPA are combined, Han discloses the portion of the DBDM terminal recited in the APA. Accordingly, Han may have the same configuration as the DBDM terminal, but Han may not implement the missing claimed features.

As set forth in paragraph [0033] of the published application, packets processed through the communication protocol of the video chip may be provided to the packet application by interworking with a socket of a TCP/IP upper layer. Therefore, there is no need to have an additional socket interworking interface for the CDMA modem chip and the WCDMA modem chip.

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The applied references do not teach or suggest using one data communication protocol to process frames used in different communication systems.

Han and Chen do not teach a DBDM terminal. AAPA very clearly describes that a CDMA modem chip processes PPP frames into IP packets (according to a built-in communication protocol of the CDMA modem chip) and transmits the IP packets to a video chip. Additionally, the video chip transmits IP packets to the CDMA modem chip, which converts the received IP packets into PPP frames. See paragraph [0011] of the published application. AAPA clearly describes that processing/conversion occurs in the CDMA modem chip. Problems may occur as a result of this DBDM structure. See paragraph [0014] of the published application. Applicant respectfully notes that Han and Chen do not recognize the structure and/or problems of a DBDM terminal.

The Office Action appears to disregard express teachings of paragraph [0011] of the published application, namely that processing/conversion occurs in the CDMA modem chip. The Office Action cites AAPA for specific structure of a DBDM terminal and then disregards the operations of that specific structure. This is improper as paragraph [0011] is a direct teaching of how the DBDM terminal operates. Stated differently, the operations discussed in the cited paragraphs [0006] and [0007] occur at least in part because of the operations discussed in paragraph [0011].

The Office Action states that the motivation/suggestion to modify Han's invention is because Chen's UART interface only supports the PPP protocol and the AAPA video chip provides IP video services. This is not proper motivation (or suggestion) to make the

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combination. The combination clearly destroys the express purpose of AAPA, namely to operate a DBDM. This combination alleged in the Office Action is clearly based on impermissible hindsight.

AAPA and Chen (and Han) do not teach or suggest the data communication protocol of the video chip converts the Point to Point Protocol (PPP) packets received from a first network modem chip into Internet Protocol (IP) packets for the video chip, and the data communication protocol of the video chip converts IP packets in the video chip into PPP packets for the first network modem chip.

For at least these reasons, Han, Chen and AAPA do not teach or suggest all the features of independent claim 1. Park does not teach or suggest the missing features of independent claim 1. Thus, independent claim 1 defines patentable subject matter.

Independent claim 11 recites that the terminal performing packet data communication with a second communication network, the terminal performing packet processing by using the data communication protocol in packet data communication with a first communication network, wherein the terminal performing packet data communication with the second communication network including: directly providing a packet to a second network modem from the video chip when a packet is transmitted from the terminal to the second communication network in packet data communication, and receiving an IP frame at the video chip through the second network modem, the video chip performing packet processing and interworking with a socket when a packet is transmitted from the second communication network to the terminal. Independent claim 11 also recites the terminal performing packet

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processing by using the data communication protocol includes: converting an Internet Protocol (IP) packet to a Point to Point Protocol (PPP) packet in the video chip, converting the PPP packet into a PPP frame and providing the PPP frame across a Universal Asynchronous Receiver Transmitter (UART) interface to a first network modem when a packet is transmitted from the terminal and across the UART interface to the first communication network in packet data communication, and receiving a PPP frame at the video chip from the first network modem, converting the received PPP frame into an IP frame at the video chip, and performing packet processing and interworking with a socket when a packet is transmitted from the first communication network and across the UART interface to the terminal.

For at least similar reasons as set forth above, Han, Chen, AAPA and Park do not teach or suggest at least these specific features of independent claim 11. More specifically, the applied references do not teach or suggest a specific relationship relating to a UART interface, a video chip, a first network modem and a second network modem, as recited in independent claim 11. AAPA and Chen (and Han) do not teach or suggest converting an Internet Protocol (IP) packet to a Point to Point Protocol (PPP) packet in the video chip, converting the PPP packet into a PPP frame and providing the PPP frame across a Universal Asynchronous Receiver Transmitter (UART) interface to a first network modem when a packet is transmitted from the terminal and across the UART interface to the first network modem and to the first communication network in packet data communication. AAPA and Chen (and Han) also do not teach or suggest receiving a PPP frame at the video chip from the first network modem, converting the received PPP frame into an IP frame at the video chip, and performing packet processing and

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interworking with a socket when a packet is transmitted from the first communication network, through the first network modem and across the UART interface to the terminal. Thus, independent claim 11 defines patentable subject matter.

Independent claim 19 recites judging a system mode by using a terminal including a video chip having a data communication protocol for a first network and a second network, transmitting packet data across a Universal Asynchronous Receiver Transmitter (UART) interface and across a first network modem chip to the first network when the judged system mode is a first communication service for the first network, the transmitting including performing Internet Protocol (IP) packet processing at the video chip with the data communication protocol and performing mutual conversion of IP packet and Point to Point Protocol (PPP) packets at the video chip only when in communication with the first network. Independent claim 19 further recites transmitting a pertinent Internet Protocol (IP) frame across a second network modem chip to a second network by transmitting the IP packet directly to the second network modem chip when the system mode is a second communication service for the second network; receiving packet data from the first network, and receiving data from the second network.

For at least similar reasons as set forth above, Han, Chen, AAPA and Park do not teach or suggest at least these features of independent claim 19. More specifically, AAPA and Chen (and Han) do not teach or suggest performing Internet Protocol (IP) packet processing at the video chip with the data communication protocol and performing mutual conversion of IP packet and Point to Point Protocol (PPP) packets at the video chip only when in communication



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with the first network in combination with transmitting a pertinent Internet Protocol (IP) frame across a second network modem chip to a second network by transmitting the IP packet directly to the second network modem chip when the system mode is a second communication service for the second network. Thus, independent claim 19 defines patentable subject matter.

For at least the reasons set forth above, each of independent claims 1, 11 and 19 defines patentable subject matter. Each of the dependent claims depends from one of the independent claims and therefore defines patentable subject matter at least for this reason. In addition, the dependent claims recite features that further and independently distinguish over the applied references.

For example, dependent claim 8 recites that the first network modem chip performs only functions of a modem for the first communication network and the second network modem chip performs only functions of a modem for the second communication network. The Office Action cites AAPA paragraphs [0006]-[0007]. However, AAPA clearly includes a CDMA modem chip that performs conversion between PPP frames and IP packets. Thus, AAPA does not teach the features of dependent claim 8. Dependent claim 8 defines patentable subject matter at least for this additional reason.

### **CONCLUSION**

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Favorable consideration and prompt allowance of claims 1-12, 15-19, 23 and 25-27 are earnestly solicited. If the Examiner believes that any additional changes would place the

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application in better condition for allowance, the Examiner is invited to contact the undersigned attorney at the telephone number listed below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this, concurrent and future replies, including extension of time fees, to Deposit Account 16-0607 and please credit any excess fees to such deposit account.

Respectfully submitted,  
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